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THE PRESENT KNOWLEDGE OF EPIDEMIC POLIOMYELITIS.

Antonio D. Young, M. D., Oklahoma City, Oklahoma.

It is probable the virus of epidemic poliomyelitis has never been seen; but that there is a specific micro-organism causing this disease seems to have been proved by the experiments of Flexner and others. This virus readily passes through the finest filter and most likely is too small to be discerned by our present microscopic mechanism.

Flexner's experimental researches upon the monkey, the only animal except man, to which the disease has been transmitted, seems to establish its contagiousness and the most common place of entry and exit of the virus is the naso-pharyngeal mucous membrane. This is owing to the peculiar arrangement of the lymphatics which furnish a direct route between the naso-pharyngeal cavity and the leptomeninges.

Flexner has shown conclusively that flies fed upon the spinal cord of monkeys that have died as the result of epidemic poliomyelitis, and introduced intra-cerebrally, are capable of producing the disease in other monkeys. It is reasonable to assume that this will hold true for man.

It will be noticed that throughout this article, the disease is spoken of

as epidemic poliomyelitis. This is because there are probably a number of pathogenic bacteria giving rise to the clinical and pathological phenomena of infantile paralysis, just as we have the epidemic form of meningitis due to the diplo-coccus intercellularis and many varieties due to other micro-organisms.

The pathological changes presented by infantile paralysis are gross lesions visible to the naked eye and minute lesions discernable only to the microscope. The gross lesions are congestion and hemorrhage into the gray matter of the cord and are no proper measure of the damage inflicted by the virus.

The microscopic lesions (Flexner, Journal A. M. A. Vol. LV 1105) are more severe and widespread in the spinal cord than in the brain and more pronounced in the gray matter and membranes of the cord than in the white matter. No part of the spinal cord, including the medulla, is entirely free from lesions, but the severest lesions tend to occur at levels corresponding to the groups of muscles most severely paralyzed. The meninges show more or less diffuse infiltration with round cells, the greatest accumulations of which are about the blood vessels where thick collars of cells often exist. The infiltration is within the adventitial coat, while the muscular coat and the intima remain intact, alhough the lumina of the vessels are often encroached on through compression. When the vessels are small the effechon the lumina, and hence on the permeability, are considerable. Meningeal cellular invasion is always interstitial and does not give rise to exudate on the surface of the cord or brain, and it is, morover, made up almost exclusively of mononuclear cells.

The gray matter of the cord shows lesions of the anterior and posterior horns and the commissure, but the anterior horns are as a rule more severely and widely injured than the posterior horns. The chief lesions surround the vessels and consist of a cellular infiltration and edema of the perivascular spaces, and sometimes of hemorrhages as well. When the nerve cells and ground substance are injured, as is frequently the case foci of similar cells occur there, and the nerve cells show degeneration and necrosis. The extent of the lesions in the gray matter varies greatly. Sometimes minute foci of injury and sometimes complete degeneration of the anterior horns occur. The infiltration of the perivascular sheaths of the vessels is continuous with that of the pia-arachnoid. The white matter of the cord holds in respect to the frequency and severity of the affection an inferior position and the lesions when present there consist of edema, perivascular cellular infiltration, hemorrhage and necrosis of tissue. The brain shows lesions that are, however, more sparse than in the spinal cord. They correspond with cellular infiltrations of the meninges similar to but less in amount than in the cord. The intervertebral ganglia regularly are the seat of a diffuse and nodular infiltration with lymphocytic cells, which collect between the nerve cells and about the nerve fibres, both of which may be the seat of degeneration or of necrosis.

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The pathogenesis of the affection is explained by the nature and distribution of the lesions. It would appear that the virus becomes implanted on the leptomeninges, especially in the region of the spinal cord and medulla, where it sets up cellular infiltrative changes that are most marked in the perivascular lymph spaces of the arteries entering the nerve tissues. The vascular lesions constitute the primary causes of the lesions of the nervous tissue, the severity of which is determined by the particular vessels affected and the intensity of the involvement. The infiltrative lesions are confined to the perivascular lymph sheath and adventitia, but still other lesions must occur in the intima of the vessels from which the edema and hemorrhages arise. The central arteries entering the anterior median fissure and supplying the anterior gray matter of the cord invariably become affected through which the preponderance of lesions of the anterior horns is accounted for. Since the arteries supplying the posterior gray matter are less important, the lesions in the posterior cornua are slighter. The degree, therefore, of affection is determined by the richness of the arterial blood supply whence is explained the liability of the lumbar and cervical enlargements to severe lesions. Irregularity in the branching of the central artery probably explains the common variations observed in the involvement of the two lateral halves of the body. The brain is far less commonly the seat of lesions, but it is not spared. Paralysis of the cranial nerves, and especially of the facial nerve, follows on them, but the lesions also occur in parts of the brain which do not respond by paralysis. The brain injuries, like those of the cord, depend on vascular lesions.

Hence it would appear that there are good grounds for believing that a considerable part of the paralysis, especially those that are not permanent are the effects of temporary vascular impediments. The impediments are all outside the lumina of the vessels, which are merely reduced in caliber through pressure. Thrombi do not occur. Some of the functional disturbances are possibly thus anemic in origin; others are probably caused by slight degenerations, and still others are undoubtedly caused by focal hemorrhages and edema. All these effects may possibly be recovered from: part by resolution of the cellular vascular infiltrate and re-establishment of the lumen; part by absorption of edema and hemorrhage, and part by restoration of the mildly degenerated nerve cells. The severer degenerative and other lesions through which actual necrosis is produced, do not become restored. On them depend the permanent paralysis and deformity.

Jelliffe quotes Wickman (Journal A. M. A. Vol. LVI No. 25) who recognizes "At least eight fairly definite types of the disease." They are as follows:

1. The Spinal or Poliomyelitic Form. This is the usual type with its rich and varied symptomatology.

2. The acute Ascending or Descending Types. These correspond to the

Landry paralysis type, also seen in some hydrophobias and certain neuritides, and which are usually, though not invariably, fatal.

3. The Bulbar or Pontine Forms. In these the bulbar or pontine nuclei are most prominently affected. Here belong many central facial palsies, isolated eye palsies, palsies of the larynx and pharynx. Many of the fatal cases are such because of the medullary involvements. Medin and Oppenheim, respectively, have studied the bulbar and pontine forms.

4. The Encephalitis Form. Strumpell has studied this type in particular. While apparently rare in the New York epidemic, nevertheless it occurred.

5. The Ataxic Form. This is usually a predominantly cerebellar type, and has been seen in only a few instances.

6. Neuritic or Neuritis-Like Form. This is an admittedly difficult type to diagnose but inasmuch as neuritis is usually rare in children—excepting diphtheria—its occurrence at the time of an epidemic should throw light on the diagnosis.

7. The Meningeal Form.

8. The Abortive Form. Wickman roughly estimates that those constitute 15 to 20 per cent of all the cases, and Muller regards them as occurring more frequently than all the other forms. If Muller's position be true, we have an intensely practical problem before us. It will be imperative for us to devise rapid and accurate methods of diagnosis of these abortive cases if an epidemic is in progress, and prophylactic measuers must be put in operation to prevent the spread of the disease through these abortive cases. That they can be the direct means for the communication of the disease has been abundantly proved by most modern students of the disorder, more particularly by Wickman and by Muller.

In his experimental studies Flexner observed an incubation period of from three to thirty-three days. He says: "The prodromal symptoms consist of a state of undue nervousness and excitability on the part of the inoculated monkeys, or inability to fix the gaze, with which is associated a wrinkle and mobile rather than smooth and placid cast of countenance and an erection of hairs over the body. These symptoms are most marked for a period of from six to eight hours before the onset of the paralysis. We have not noted any constant elevation of temperature or gastro-intestinal disturbance. The onset of paralysis either when the prodromal symptoms have occurred, or when they have been absent or undetected, tends to be sudden. The paralysis affecting any of the larger groups of voluntary muscles tends to be accompanied with other weak or partially paralyzed groups of muscles. In certain animals the medulla was first affected, and in them death sometimes occurred before the development of actual paralysis. In respect to location, the lower and upper extremities were affected oftener than the muscles of the trunk and the spinal paralysis were much more frequent than the cerebral. Sensory disturbances occurred, but their investigation

was much less satisfactory than the investigation of the motor disturbances. In other words, there is a striking similarity between the frank examples of epidemic poliomyelitis, whether occurring spontaneously in man or produced experimentally in monkeys. A further correspondence exists in this: Slight and evanescent or abortive attacks of the disease have been described in human beings, cases the nature of which would not be suspected were it not for the fact that they occur during the prevalence of epidemics of frank paralysis; and similar abortive or evanescent attacks have been noted among inoculated monkeys, but rarely."

The symptoms of the other types are indicated by their titles and unless an epidemic be present are usually not diagnosed until late in the attack. Jelliffe says, "The chief signs in the meningeal forms vary in their initial stages, from those of the spinal type, only in the matter of greater severity. There is a headache, nausea and vomiting slight photophobia with hyperachusis pains in the neck and back, stiffness of the neck, rigidity of the muscles of the vertebral column, opisthotonos of milder or severe grade, Kernig's isgn, tonic or clonic convulsive movements; somnolence and even unconsciousness. The temperature runs a non-characteristic course.

"While in the ordinary spinal type the disease develops in classical fashion, in the meningitic form it may recede rapidly, and beyond the possible occurrence of transitory or permanent eye palsies nothing remains. In some cases death ensues with the development of stormy symptoms."

"In the Vienna epidemic of 1908-1909, Spieler observed at least eight meningeal forms in a series of forty-four cases; in four of these the picture resembled tuberculous meningitis so very closely as to be diagnosed only late in the disease. Spieler describes some of his cases in a very characteristic manner. The cases very frequently have a comparatively lengthy prodromal period, with beginning change in mood, fatigue, nightly unrest with frequent outeries, occasional vomiting wth obstipation, suggestive of a beginning basilar meinigitis. Then, in children, convulsions suddenly occur, marked stiffness of the neck, irregular pulse, Kernig's sign increased patellar reflexes which usually diminish later, facial pareses, strabismus, general hyperesthesia, vasomotor disturbances and atypical facies cerebralis. At this period the lumbar puncture will show lymphocytosis, but no purulent exudate. In the favorable cases the symptoms then begin to recede, the temperature falls to normal, the irritative phenomena diminish, and there may develop a number of the palsies characteristic of the spinal form.

From an examination of the cerebro spinal fluid, Flexner thinks it possible to make a diagnosis of poliomyelitis before the appearance of paralysis or signs of meningeal irritation. At the expiraton of twenty-four hours to seventy-two hours from the time of the inoculation of the monkey, the number of the cells within the fluid progressively increases as to give rise to a slight opalescence of the fluid which becomes also subject to spontaneous coagulation. The fluid also contains an excess of protein as shown

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by Noguchi's butyric acid test. These abnormal conditions disappear by the time the paralysis has appeared.

When infantile paralysis is suspected the cerebro-spinal fluid should be examined.

Thus far all efforts to produce a serum, therapeutically successful have been unavailing. Until such a serum has been produced, it is probable no specific will be available.

While Flexner was unable to influence the disease in monkeys, by the administration of Urotropin, he did seem to postpone the onset of paralysis by giving it before the inoculation of the monkey by the virus. Hence aside from any symptomatic remedies indicated· Urotropin should be given in large doses.

MEDICAL INSPECTION IN PUBLIC SCHOOLS, ITS NEEDS AND DESIRABILITIES.

By Dr. A. B. Montgomery, Muskogee, Oklahoma.

In 1803 to 1812, John Ware of Chelsea, England, called attention to the relation between eyesight and educational pursuits. In 1886 Cohn of Breslau, a Prussian Army Surgeon, published his famous report upon the eyesight of 10,000 school children. Medical inspection of schools was advocated in 1867 by Virchow. Later Cohn himself drew up a scheme of duties for school physicians, which was first considered at the International Congress of Hygiene at Geneva in 1883. In 1875 Prof. Bowditch recorded the measurement of height and weight of 25,000 school children in Boston. In 1882 Hertel of Copenhagen as a member of the Danish Commission reported that of 16,000 children examined in both primary and secondary schools, 29 per cent were unhealthy. In 1884 a Royal Swedish Commission was appointed to investigate health conditions in schools. On their behalf Prof. Axel Key examined 18,000 children in several countries and published a report upon the growth and development of boys and girls at different age periods. He also like Hertel discovered that a large proportion approximately 35 per cent of children were suffering from chronic physical defects, such as anemia, headache and short-sight. In 1885 Dr. Francis Warner of London, first directed his attention to the examination of school children with special reference to their mental status. In 1891, a medical officer was appointed for the School Board for London, and two years later, Dr. James Kerr was appointed at Bradford, ostensibly for the purpose of examining absentees from school who were alleged to be suffering from disease, but who did not furnish a doctor's certificate. Dr. Kerr was the pioneer of all official routine in connection with medical inspection in the elementary schools of England. He appears to have been the first medical man to enter the schools daily in the role of the school doctor and to study all problems of school hygiene working in conjunction with the teachers in the interest of the children. In Leipzig, local school doctors had been appointed two years previous, but apparently they acted in the capacity of specialists for the eye or ears rather than for general purposes. In 1893, England enacted the blind and deaf act, which was the first authoritative advance providing for the appointment of medical officers for schools. In 1899, she passed an act relating to defective and epileptic children. As late as May 1903, the chief matters coming under the notice of the medical officers of the School Board for London, had been: First, notification by teachers and control by individual exclusion, class or school closure in cases of infectious diseases. Second, Examination of teachers, candidates or employees in regard to health. Very little has been attempted as regards (a) School and medical

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matters in the hygienic bearing· (b) physical conditions of children, measurements, nutrition, vision, hearing. (c) Conditions of school—ventilation, heating, lighting, furniture.

In the United States of America, the chief aim of medical inspection so far, has been directed towards the prevention of infection and contagious diseases. Much useful work has been done in this direction by various municipalities, but very little has been attempted with regard to the real problems of school hygiene, except in Boston, where a Director of School Hygiene was appointed as early as 1891. In the following year· medical inspectors were first appointed. Next, the problem of school sanitation was considered, then came the physical conditions of all school children, followed by scientific study of child life and the problems of school hygiene. Now a fully staffed special department of school hygiene has been established with a director and three assistants· play ground teachers, nurses and a medical inspector of special classes. Legislation as to medical inspection exists in only four states. In 1906, a mandatory law was passed in Massachusetts, which made provision, First, for the detention of contagious diseases in schools. Second, for the annual examination of children by physicians for all non-contagious physical defects and teachers for defect of eyesight and of hearing.

Fundamentally, the state control of health inspection depends upon the fact that a large proportion of children attending public schools are suffering from preventable and remediable diseases. It matters not for the moment to what extent the home is responsible nor how far the diseases are aggravated by school life· it is sufficient that the defects are unrecognized here by the teachers or parents who alone are in contact with the children, hence it is clearly a national duty to discover a system by which these preventable and remediable defects may be brought to light, seeing that the children are collected together during several years of their life in public schools for the purpose of education, it becomes a matter of convenience to delegate the Nation's responsibility to the educational department. Every school contains a percentage of children suffering from unrecognized defects. Probably more than 80 per cent have defective teeth; 20 per cent defective vision. Ten per cent are retarded in their educational progress by physical defects, such as Anemia, General Debility and Deafness, resulting from adenoid growth or discharging ears. These figures may not be exact, but the general inference is sufficiently sound. In other words, medical inspection in the elementary schools is necessary, because the parents are ignorant. It is only a means to an end, and at present the end in the education of the people. Indeed, it has been argued that it devolves upon the state at the present day to make good its defective training and education of the parents during the last 20 years or 30 years· by directing a system of health inspection towards the education of parents and children alike. For if all parents had been taught the elements of healthy living and were able to recognize the presence and to realize the importance of physical

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disabilities and defects in their children, systematic health inspection would theoretically be out of the question. But as matters stand today, the interference of the state is essentially justified by the large amount of preventable and remediable effects among school children. The defects are unrecognized either by teachers or parents and can only be discovered by systematic medical inspection.

Susceptibility of school children, especially those in the lower grades to such acute diseases as measles, scarlet fever, diphtheria, acute anterior, poliomyelitis, commonly called infantile paralysis, is so great that the benefits capable of being conferred upon the coming generation by the early recognition, treatment and prevention of these diseases alone is incalculable. Measles, which are commonly considered a trifling affection only too often lay the foundation for serious affections, chiefly tuberculosis. Scarlet fever, the most varied in its manifestations of any of the exanthematous diseases, in its mild form is often unrecognized, and consequently untreated with the attending increased dangers of contagion. Even the mildest forms of this disease may be followed by an acute rapidly fatal kidney affection or a chronic form entailing a life of invalidism upon its victim. A large percentage of cases of deafness and consequent partal or complete loss of speech in infancy and childhood is due to scarlet fever. Rheumatism may also occur as a complication or sequel with an accompanying incurable organic heart affection. Certain acute and chronic nervous affections of childhood and later life have their foundation in scarlet fever and the rheumatism accompanying or following it, for example Chorea commonly known as St. Vitus dance. Infantile paralysis, about which we have heard so much in the last few years, is a matter of fact, a very old disease and references are made in the Bible to cases of it. While the organism producing this disease is not isolated, it is probably both contagious and infectious. Contagion most probably occurring through the mucous membrance of the nose and throat.

Tuberculosis is one of the acute infections most common to childhood and early adult life. Fortunately in probably a large proportion of cases which are unrecognized spontaneous recovery ensues. In 1131 autopsies on children over three years of age, Wolfstein of New York, found 185 cases of tuberculosis or 11.4 per cent. Sherman reports from Edinborough of 1035 autopsies upon children up to 13 years, of these 431 or 38.8 per cent were tuberculous. The number of deaths due to this disease, however, by no means represents its prevalence thus in Vienna, Von Pirquet found 90 per cent of hospital children re-acting to this test. These, however, were sick children from poor families where tuberculosis is very prevalent.

In 1907, Lowman found in Cleveland, that 20 per cent of 500 school children gave evidence of infection and Rous in Paris, found 40 per cent.

In 2295 school children in New York, tuberculosis was found in 29 per cent. These figures show without a doubt that tuberculosis in childhood is common. The importance of the early recognition and isolation and spec-

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ial care of tubercular children in school is obvious. From 25 to 50 per cent of school children in the first three grades are affected to a greater or less extent with adenoids or tonsilitis. Adenoids, as it is well known, produce mouth breathing, and in the growing child results in changes in facial contour and expression, imperfect occlusion of the teeth. As a result of the consequent unnatural method of breathing, the child suffers from listness and dullness of intellect. Adenoids also frequently produce temporary deafness, which may become permanent by closure of the Eustachian Tube and resulting changes in the ear drum.

Dental Caries (Decayed Teeth) frequently cause absorption of septic germs and their products and in this way produces malnutrition and anemia as well as grave general septic conditions. They may also become the point of entrance for such germs as the T. B. Tetanus, possibly typhoid and many others. Every child showing evidence of deficient growth in height, weight and metnal development, should have a careful, painstaking physical examination, preferably by the family physician, and an effort made to determine the cause and remove it if possible. Under ideal conditions of medical school inspection whereby every child, especially in the lower grades is systematically given a thorough physical examination at least once a year, and those showing any abnormality whatever reported to their parents and recommendation made that they be placed under the care and supervision of the family physician and by him referred to the proper specialist in case special treatment is indicated, would within a very few years produce a very decided result in the physical and intellectual conditon of very many pupils.

Medical inspection as instituted and carried out in the Muskogee schools for a few months this year shows about the same percentage of physical defects found among other school children in the country. Our examinations were confined to the detection of diseases and abnormalities as affecting the eye, ears, nose, throat and teeth. While these investigations were only in progress a few weeks the results proved conclusively to the mind of any thinking medical man of the advisability and necessity of such inspection being made a part of the regular school regime.

"Physical and mental health in childhood" as the foundation of national stamina and puericulture and pediatric medicine are very intimately connected with the science of eugenics. The tendency of the age is towards the development of prophylactic medicine and socially prophylactic measures connected with childlife are increasingly abundant. All such measures to be successful must be supervised, managed and regulated by medical experts. Recognition of the peculiarities of childhood and of the characteristics of disease at this period, must be most widely diffused and thorough in character among physicans as well as the laity, and with the attainment of special knowledge there must be developed a greater sense of responsibility towards social childhood, a realization that special knowledge implies special obligations and that knowledge socially as individually essentially

implies leadership. It is very necessary that school boards, superintendents, principals and teachers thoroughly understand the fundamentals, desirability and necessity of medical inspection of school children. It is our desire as physicians and your duty as physicans' wives to aid in educating the public along these lines. No claim is made to originality in this paper either in the subject matter given or the practical deductions drawn from it. I have quoted liberally from current pediadric literature, especially from Hogarth's Medical Inspection of Schools, and Fordyce's Hygiene of Infancy and Childhood. Both of these works are well worth the careful perusal of all who are interested in the problems of childhood.

Read before Ladies' Auxiliary of Oklahoma State Medical Association, May 10, 1911.

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TREATMENT OF COMPOUND FRACTURES AND LACERATED WOUNDS

By V. Berry, M. D., Okmulgee, Oklahoma.

Historically the modern treatment of compound fractures and lacerated wounds dates from the principles enunciated by the great Lister.

As to the practical application of those principles we are indebted to the great masters of surgery who are practicing the art today, and it is an amazing fact that there are hundreds of physicians who utterly fail to realize the importance of a proper "first aid" to these cases, and the simple proceedings necessary to carry out "first aid" dressings.

Compound fractures have long been a veritable nightmare to the average general practitioner and as well to some excellent surgeons, but I am sure a better day is dawning and is now at hand when such injuries will be treated with almost as much assurance of good functional results as a simple fracture involving the same structures. If there are those who doubt this statement, let them spend a few days at Augustana Hospial, Chicago and see the results accomplished by the renowned Ochsner Brothers. Then let him follow their methods in his own work and he will soon be convinced of the true value of antiseptic surgery, for here we must not only practice aseptic surgery but antiseptic surgery of the most efficient technique.

At the outset, I wish to say I do not practice Ochsner's technique specifically throughout, but do so in a general way. In other words, I use other means to exactly the same ends. Where he uses turpentine and green soap for scrubbing the skin, I use ether and soap, and here let me say I find results just as good with the use of common laundry soap, or Ivory soap, as with green soap. In fact, I use it regularly in the hospital and do not believe any man in the state gets primary union oftener than I do. However, as better illustrating my method of handling a compound fracture, I will give the following case history in a general way:

On a very hot day in August 1910, I was called to see a colored boy, Ell L., aged twelve years, who a few hours previous, had happened to the following peculiar accident:

He was driving two mules along the road, the mules being tied to opposite ends of a long rope, when an automobile came along and stampeded the mules. One mule ran south and the other north and the middle of the rope got wound around the boy's left humerous about three inches below the head. The rope crushed and sawed the arm in such a way as to fracture the humerous, breaking the head off and splintering the shaft, tore the muscles in two, together with a large ragged hole in the skin on the

inner anterior aspect of the arm just over the fracture and made an extensive rope burn from that point down to the middle of the biceps muscles. In fact, this burn was so severe that in five days from the date of the injury, the biceps sloughed out en mass down to the bone except the lower half and a small portion of the upper attachment. When the boy was picked up he was totally unconscious and remained so for several hours. Also a fragment of bone had fallen out of the wound on first inspection by the boy's father. When I saw him he had regained consciousness and the wound was covered with clean, absorbent cotton and common cloth. My first effort was to protect the wound from infection during transit to a permanent stopping place in the city· and this was attempted by covering the wound wtih gauze moistened in strong iodide of mercury solution. He was at once transported to the city, anesthetized, and the arm, chest, neck, shoulder and all surrounding parts thoroughly scrubbed with soap and water, then ether, then alcohol· ninety per cent, and lastly tincture of iodine. However, before any skin cleansing was commenced, I thoroughly injected the wound with several ounces of Claudiu's solution of iodin, filling every pocket, both in the soft tissues and bone. This is very important and should be done preliminary to any other cleansing· for, should dirty solutions from the skin get in the wound infection is not so apt to occur.

After thoroughly cleansing the skin, which was done with the bare hands made as near sterile as possible· I put on rubber gloves and henceforth the strictest possible aseptic and antiseptic technique is imperative. I now take a large sterile glass, piston syringe, one holding four ounces is suitable, with asbestos packing and inject fifty per cent alcohol into every portion of the wound, using it till all portions of the wound are absolutely free of blood clots and other debris; and of course all fragments of bone and foreign matter must be removed, and all unnecessary fragments of soft tissues clipped off· and in fact, the alcohol must be used unil the tissues are absolutely clean.

There must be no compromise on the dictum that the wound shall not be touched with anything but the gloved hand, sterile instruments and gauze. After assuring myself that all hemorrhage is stopped and that the wounds is absolutely clean, I now again inject the entire cavity with Claudiu's iodin solution, and for temporary drainage, lay a small pledget of gauze saturated in the solution just deep enough to prevent the skin from closing and then cover the entire wound and for a wide margin beyond, with a rather heavy dressing of plain dry gauze.

In the case I am now reporting· I attempted to use a reinforced plaster splint extending from the back and side of the chest down the posterior surface of the arm, but when the biceps sloughed off, infection occurred and the liquefaction of soft tissues was so intense that I removed it and simply laid the arm out on sterile pads on a firm mattress without any splints whatever, and applied a loose circular bandage with a kind of hood over the shoulder. When infection occurred from the sloughing biceps it

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rapidly extended up the muscle sheaths and into the wound involving the fracture, and the purulent discharge was so intense that I could see no prospect of saving the limb. However, I said to myself that here was a chance to make a thorough test of iodin as an antiseptic, and made up my mind to take the risk. My assistant agreed that the case looked almost hopeless.

The thermometer stood at 105 F. every day and the muscles melted like wax. However, I proceeded as follows:

Injected all pockets and spaces with full strength iodin solution, and after moping all pus away with dry gauze pads, poured the solution all over the wound and adjacent skin margins and covered over with a pad soaked in the solution. In a few days—some four or five—the infection was limited to the superficial fascia and a few minor extensions into the deeper intermuscular spaces. The fracture wound was comparatively sterile and showed healthy granulations. I repeated this process of dressing every day for about five weeks and was rewarded by splendid bony union, with considerable deformity, and after bony union took place I dissected up the ends of the biceps under an anesthetic, and by plastic maneuvers of rather doubtful ultility at the time and skin grafting got an arm that is useful for almost any manual labor; and while the elbow stands at about a right angle, flexion and extension up to that point is very good. With the extensive destruction of the biceps and with consequent ciretrization we could expect very limited motion.

The treatment of extensive lacerated soft tissues is carried out along exactly the same lines, but of course is much simpler than where bony tissues are injured in addition.

My experience in the use of iodin as an antiseptic is so satisfactory that I have almost discarded every other chemical antiseptic except alcohol and soap. I verily believe that one could do a laparotomy with the skin painted thoroughly with tincture of iodin without preliminary scrubbing. However, soap and water is too cheap for such a simple technique.

I will say in conclusion: It is my belief, given a patient of average powers of resistance with a compound fracture, if the first step of "first aid" consisted in injecting the entire wound with Claudiu's solution of iodin, and then proper cleansing of the wound and adjacent tissues as outlined in this paper, the mortality in such cases, would be reduced by a large percentage below what it is at present, and the saving of limbs would be increased by a still larger per cent.

DISCUSSION.

Dr. W. E. Dicken, Oklahoma City:

I got in in time to hear only something about the Tincture of Iodin. That struck me forcibly because in the last two years the Tincture of Iodin

has been my sheet anchor. My method is (especially in cases of laparotomy) to have the nurse scrub the patient's abdomen with soap and water, followed by bi-chloride, and dress with aseptic dry dressing over night before operation; and then paint the abdomen just before operating with three per cent Iodin crystals in alcohol. The reason I think it necessary to have the field of operation sterilized twelve hours or so before operation is because Iodin is more effective on a dry skin than on a wet skin. The reason it is not always effective is because doctors scrub with soap and water and then use Iodin. The skin should be dry for the Iodin to get into the pores of the skin.

Dr. Hartman, Ada, Oklahoma:

I just want to ask Dr. Dicken to state his experience in the use of iodin in stitch abscess.

Dr. Dicken: I have never had a stitch abscess since using Iodin—a three per cent solution of iodin crystals in alcohol. That is strong enough to kill germs but it won't blister. Have the skin dry.

Dr. Leroy Long, McAelster, Oklahoma:

In the treatment of compound fractures there are certain fundamental procedures we must not forget. The first thing, and it is one we cannot always have carried out, is the preliminary dressing. I think we can do a good deal of good by instructing men, especially is this true in the case of railroad accidents, to put on a clean dressing when the accident is first received.

The next thing is to get the wound clean. I think Dr. Berry pointed that out in an excellent manner. However, as he indicated, he does not claim results superior to men who use other means. We should get the wound clean then provide for drainage. I think in compound fractures that good drainage is important. I have been impressed with the way we clean up a wound sometimes and then stitch up to make it look pretty, and then sometimes we have sloughing, etc. We must provide for drainage.

In regard to removal of pieces of bone—I don't think it necessary in every case of compound fracture to get every particle of the bone out; I think sometimes those pieces will act as a focus for new bone to form—cells will spring up.

The most essential thing, perhaps, is to put the limb in a comfortable position.

This subject appeals to all of us and if you bear in mind to clean the wound thoroughly and provide for drainage, you will get good results.

XUM

CHORIOIDITIS.

Dr. S. M. Jenkins, Enid, Oklahoma.

Inflammation of the chorioid is met with more often than any of the intraocular diseases of the eye. The object of this paper is to deal with the problems that confront us in our every day efforts to combat the attacks and inroads that disease makes upon the "Windows of the Soul." Not only are they windows to the soul, but they are the common, everyday bread-winners of those who toil for a living. It matters not whether that toil be performed by brains or brawn. The eye is the most important faculty that we possess and upon its usefulness depends the success or failure of the most earnest efforts of all those who earn their living by mental as well as physical efforts. Say what you may about brilliant efforts of the trained and active mind, and the fine skill of the artist's or sculptor's hand, all these are but naught without correct vision to guide the hand aright or make known the results and ideas of the profound and brilliant brain worker. "To see or not to see" that is the question.

"There is often as much fault in the object that is seeing as in the one that is being seen."

Intra ocular diseases are not usually very fascinating to the average occulist. Slow and tedious are the recoveries at best. Chorioiditis is characterized by diminution of vision, unaccompanied by pain or other usual manifestation of an inflammation. If not complicated by other diseases, diminution of vison and perhaps black specks before the eye is all the patient complains of. The opthalmoscope, the only reliable means of diagnosis reveals yellowish or brown spots of varying shapes and sizes dotted about pretty well over the chorioid. Most of the spots resemble the specks made by dotting a pencil point upon paper. Occasionally a longer spot as if a short stroke had been made with a pencil. The onset is never sudden, usually very chronic. Several weeks or even months have elapsed before the patient will seek medical aid or advice. No age is exempt. We find it in the aged and it has been discovered in the newly born. Sex does not predispose, both sexes being attacked with an equal ratio. My individual observation has been that uncomplicated inflammation of the Chorioid is rare. Involvment of the iris and retina are usually present when my advice is sought. I have met with it in cases of ulcer of the cornea where my services were sought to remove somthing from the eye. The patient being positive that there was something in his eye for he knew when he got the foreign body in the eye. The ulcer was discovered and treated first, the chorioiditis afterwards.

The course and duration where treatment is instituted, is from eight

to twelve weeks, sometimes even longer. Chorioditis might be confounded with floating specks in the vitreous or with scars or foreign bodies in the cornea. The opthalmoscope is the only sure means of diagnosis. Movements of the eye rotating in different directions will reveal the location of the specks or spots whether they be on the cornea, in the vitreous or on the chorioid.

ETIOLOGY: Fuchs places myopia as an important factor in exudative chorioiditis. But syphilis both acquired and hereditary are given as the most common cause. General diseases of malnutrition, such as anemia, chlorosis, scrofula, tuberculosis, etc., cause many cases and frequently no cause can be assigned; the etiology remaining obscure.

TREATMENT: Treatment must be directed against the disease which caused the trouble, but the form caused by syphilis is the most amenable to treatment, iron and other reconstructives being indicated in the cases caused by anemia. Fresh air, the rest cure and forced feeding for tubercular cases. Personally I have obtained very gratifying results, in many cases, from the use of the iodides; even in the cases where specific infection was eliminated beyond the possibility of a doubt.

DISCUSSION.

Dr. Cook: I enjoyed Dr. Jenkins' paper very much. I think I take issue with him on the first statement he made there where he made the statement that choroiditis is the most common of any eye disease. I followed Dr. Jenkins and I fail to believe this.

Dr. Wilson: The fact of the matter it took me a long time to tell the difference in hyalitis and choroiditis. In cases which I used to think was possible choroiditis, I have since decided were cases of hyalitis. I believe that syphilis is a frequent cause of those cases of choroiditis troubles.

Dr. Ferguson: I want to make one remark on this paper; that is with reference to Fuchs. But he speaks of myopia; now I spent considerable time last year on this matter, and we are hardly in position to accept the same degree of ratio of cases in this country as in Germany. Myopia in this country plays its part but I doubt whether it is the most ferquent cause. My experience has been they are practically all syphilitic. I think a great many of our cases of choroiditis are not choroiditis. The diagnosis is made frequently of choroiditis when you have something else and can't see the choroid or see the fundus of the eye. I think a number of our cases of choroiditis are simply and purely hyalitis. But I just got on my feet merely to speak of the presence of myopia among the Germans.

Dr. Barnes. There are about 50 per cent of the cases of choroiditis that we are absolutely unable to give any cause for, however it is the general opinion of us all that it is due to syphilis, but the treatment will not carry that out. You may give iodide and mercury in those cases and they

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will not get any better, so it is a question for us all to study the exact cause of choroiditis. I think very often Choroiditis is preceded by Hyalitis; we have those spots in the eye and afterwards a development of the choroid, and I rather think that is a forerunner of choroiditis. And the choroiditis is not recognized at the time but afterwards shows up. It being of a chronic nature it gets quite a hold on the patient before the patient realizes it, for as the Doctor brought out in his paper, there is no pain noticed and pain is one of the greatest blessings to humanity we have. If they don't have pain they will not seek the doctor's advice. They will go along and allow themselves to do that and go blind. If they have no roaring in the ear or pain they do not seek the advice of a Doctor until they can't see a man across the street, so we are hindered in the treatment of these cases because we don't always see them early in the attack.

Dr. M. K. Thompson: The writer's experience is somewhat like the rest of us, the choroiditis I find a pretty hard thing to find in many instances. Now there are just as many in Germany have the myopia as here. But my idea with reference to choroiditis is that the only treatment we have is specific treatment, treatment for syphilis as I think it is very often brought on here from syphilis. We frequently see that condition in younger people that in all probability have inherited it rather than acquired it. But it is a pretty hard matter sometimes to tell the difference between hyalitis and other troubles.

Dr. Jenkins: Gentlemen, I thank you all very heartily for the discussion and interest you have shown in the paper. In writing the paper I did not expect to cover the ground of choroiditis. My idea of a paper at a medical association is a paper that expresses some of our individual experiences, or in some way to bring out the discussion and get the various experiences of the different men. Any of us can sit down between the hours of supper time and midnight and look up the text books and get the things out of them, and while I refer to authorities and consulted several authorities before writing this paper, but it was more to report on the ratio and frequency of the disease occurring. In several instances, if you remember the paper, I spoke of my personal observation. I didn't set the thing forward as an actual fact but because it did exist as Jenkins found it, and I want to find out how it existed as Dr. Thompson and those other gentlemen find it in their work. Dr. Cook evidently didn't understand me in the outset there about the occurrence of this disease; he evidently didn't understand what I said. "Inflammation of the choroid is met with more often than any of the intraocular diseases of the eye." I agree with Dr. Cook, the disease on which he will present a paper occurs more often than does this of the eye. But several authorities that I consulted stated that Choroiditis occurs more often, and I don't know as I will be able to say myself positively, I agree with Dr. Cook that hyalitis does occur very frequently. I have found that iritis exists but I look on choroiditis as being the fundamental disease, and the iritis as a complicaton, of course they have to be taken care of and treated.

And one of the other Doctors spoke of it being sometimes called that, that he now believed that some cases were inflammation of the retina that he formerly thought was choroiditis. Well the authorities I consulted there teaches us and my observation by using the telescope I think we are able to diagnose between trouble in the retina and the trouble in the choroid. But of you will follow these specks up that begin at the nerve head and follow the blood vessels as in the retina you will find it in front and by itself in the choroid, it will be back of the choroid. Now a great many cases we all agree that syphilis is the cause; and I have treated cases and considered that I got reasonably good results where to my mind and satisfaction anyhow syphilis was eliminated beyond any shadow of a doubt. Anyhow my experience is different from one of the other Doctors about treating choroiditis. The majority of mine get better, and I feel very thankful for it. I thank you, gentlemen.

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CHLOROFORM.

By Dr. Wm. Fowler, Alderson, Oklahoma.

Walk with me, if you will, please, three blocks north of the world-famous Princess Street, Edinburgh, lift the knocker at 84 Queen Square, step into the front room on the left and we are in the room in which Chloroform was first administered as an anesthetic for surgical purposes,—we are in the home of Prof. A. R. Simpson, the former home of his uncle, Sir James Young Simpson, who in March, 1847, demonstrated to the world the anesthetic properties of the chemical under consideration.

Dr. Simpson, actuated by an intense desire to find something that would annul or assuage the awful pain of parturient woman, had tested various remedies and substances sent him from many sources, all of which found a waste basket grave, and when a small bottle of chloroform was sent to him, by a chemist, he and his co-laborers, (chief among whom was Matthews Duncan, afterwards of London fame), were afraid to use it because of its specific gravity. The fact that it was one and one-half times heavier than water made them afraid to use it, and this sample, too, found its way to the waste pile. Sometime afterwards, however, when Dr. Simpson was overhauling this pile of rubbish, this same sample bottle of chloroform rolled out upon the floor, it was picked up and tested, with the result that today we have the most widely used anesthetic.

This, however, is not the history of chloroform. This wonderful agent, unlike you or I, can claim a birthplace in three different countries, with as many parents, and strange as it may seem, all these births occurred the same year—1831.

Soubeiran, a French chemist, Lubig, a German chemist, and Samuel Guthrie, of Sacketts Harbour, N. Y., found chloroform to be a chemical curiosity. They were looking for a diffusable stimulant, and thought they had found an easy and cheap way of making Dutch liquid (Ethene dichloride), which had been tried as an anesthetic but which had no practical value as such.

Dr. Guthrie in experimenting with chlorinated lime, undoubtedly obtained a pure chloroform, but erroneously supposed his product to be sim ply a stimulant. He never dreamed that that produced would become famous. He was looking for copper but found gold.

Chloroform is made chiefly from bleaching powder distilled with water and alcohol. Dr. Squibb and Gregory discovered that chloroform purified with sulphuric acid made a very dense liquid, too irritating and prone to decomposition when exposed to the sunlight, and recommended the addition of a little alcohol, just enough to lower its specific gravity to about 1.490.

Squibbs chloroform of today averages 1.492 at 15° C.

As prepared by Mr. Guthrie this chemical was used as early as 1832, by Professor Ives of New Haven, in asthma, spasmodic cough, etc. In 1838 by Dr. Formby of Liverpool, for hysteria, and Dr. Tuson of London used it in cancer and neuralgia in 1843.

It is today an ingredient in many liniments, and is most useful, being applicable in almost all cases where a rubifacient is indicated.

Chloroform has powerful solvent and antiseptic properties; 20 M. will prevent yeast fermentation in 16 ounces of malt, and the same amount will keep a half pint of milk (pure cow's milk) in any weather forever. This is worth remembering because of the fact that by raising the temperature of the milk to the boiling point the chloroform is gone—not so with many other preservatives and adulterants.

When taken into the stomach chloroform is without doubt partially evaporated, so that we get both a local anodyne effect, and a stimulant carminative action, thus removing gases accumulating in the stomach and bowels. Yea, more—by its antiseptic action it tends to prevent their formation. For this reason it is a valuable remedy in the treatment of colic, constipation, intestinal fermentation, etc. But it is as an anesthetic that we think of chloroform the most.

This paper is not intended to deal with chloroform-ether controversy. Suffice it to say that generally speaking the choice of the anesthetic is a matter of custom and training. In Scotland and the continent chloroform is preferred. In New England, in fact the entire Atlantic Coast, ether is the choice. In the middle west chloroform seems to lead but in the newer west, which is filled up with men from almost every college and hospital centre, we, as we might expect, find a varied choice. Personally, being of Scotch extraction, I like chloroform. Had I been born in bean-eating Boston, I would use nothing but ether.

In obstetrics chloroform still enjoys the place given it by the master mind of Simpson.

In the administration of chloroform as an anesthetic in surgery, two things that are often forgotten should be remembered. The first is the rule to give just enough chloroform to produce anesthesia and a little less. The second is the fact that the anesthetist is the man in charge of the entire performance.

Chloroform is so treacherous that the man in charge of the anesthetic may at any minute require assistance, hence all those concerned in the operation should be at his immediate command; when this fact is rightly recognized there will be little need of imposing the oft repeated rule that "the aensthetist should watch, first, the respiration; second, the reflexes, third, the circulation, always the patient, but never the operation."

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The fact that this anesthetic is treacherous proves the truth and importance of our first rule· "that the patient should receive just enough chloroform to produce anesthesia and if possible a little less."

Because of its treacherous nature the anethetist should always have at his command a mouth gag, tongue forceps· towel, small pieces of gauze on long handled forceps, hypodermic needle loaded with strychnine or strychnia, nitroglycerine and digitalin, also a fountain syringe with Canula and salt solution, and adrenalin.

The mouth gag is not so important but oftentimes useful. The tongue forceps should be carefully selected, a small single pronged volsellum or tenaculum forcep is perhaps the best—many of our tongue forceps are a joke—good things to squeeze a tongue that the patient is kind enough to leave hanging over the chin for our convenience,, but unfortunately in chloroform anesthesia, the reason we require a tongue forcep is because of the peculiar and dangerous habit patients have of "swallowing the tongue" and the instrument necessary is that instrument which can best be introduced through a small opening· and made to fish this obstreperous member out from its hiding place.

The small pieecs of gauze are to swab out the throat with whenever necessary—the towel for obvious and various purposes.

The hypodermic needle should be loaded, for two reasons· first, it is more convenient; second, it insures a needle in working order.

The combination tablet of strychnine, nitroglycerine and digitaline is perhaps the best stimulant for general use. Nitroglycerine is quick, but its action is soon over, this, however, is taken up by the digitaline, and the strychnine sustains both, but more important than any of these in near fatal cases· is the salt solution, with some adrenalin introduced with it.

Of the different ways of administering chloroform the drop method seems preferable, plenty of chloroform with plenty of air is good, but plenty of air with the drop method is better. Various contrivances have been introduced for dropping the chloroform from a bottle, but the simple cork with a "V" shaped piece cut out of it is the best, a glass stoppered bottle is now made of the same type. Many forms of masks and machines for the proper administration of this anesthetic is made. The first thing of this kind ever used, was a double lipped metal flask shaped somewhat like an eye bath, but made to fit over the mouth. This instrument may yet be seen in Dr. Balantyne's room in Surgeons' Hall, Edinburgh.

The thing most used today is Esmarch's wire mask, or one similar to it —the only practical thing yet made. Several mechanical contrivances have been patented and marketed by our ever busy instrument makers, traps that measure the exact percent of oxygen and chloroform inhaled and exhaled with every breath, with a mathematical precision that is astonishing, they are all good. To administer chloroform in a 2% solution is ideal· but

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most of these machines in practice have been weighed in the balance and found wanting.

Some controversy exists among physiologists as to the exact way death occurs from chloroform, but this much is certain. The vapor of chloroform is taken up by the red corpuscles and forms dissociable or unstable compounds with the cell substance; this leads to an embarrassment or paralysis of the cerebral and reflex centres, any one of which may succumb to a sudden influx of blood heavily charged with the vapor, causing instantaneous death. The vaso motor centres controlling the coronary arteries seem to be the weakest in this regard.

In the production of anesthesia with chloroform many things either directly or indirectly have influence on the amount of vapor used, and remembering our first rule, "To give just enough chloroform and a little less," leads us to a discussion of the proper handling of the patient.

First and most important, the patient should have implicit confidence in the anesthetist—as things go today the patient engages the surgeon—he engages that surgeon in whom he or she have the most confidence. It should then be the surgeon's duty and privilege to engage the anesthetist and arrange for his pay, and further, to assure the patient that this anesthetist is one in whom he or she may safely place their lives—this properly done is over half the battle. It is now much easier for the anesthetist to lead the patient to the operating table to examine her (assuming the patient to be a lady) heart· mouth, reflexes· etc., (the examination for organic disease, renal difficulty and so forth is presumed to have been done under the direction of the surgeon before the operation is settled upon). The anesthetist should now assure his patient that he will take good care of her while she enjoys a good quiet sleep. He should then arrange the mask, asking the patient if it fits comfortably or otherwise making her feel that he is looking after her comfort and safety.

Nervous patients may be previously fortified with some brandy, or brandy and nux vomica, or simply hot water or tea. No food should be in the stomach, but water is permissable, indeed is to be recommended if given about half an hour before beginning the administration of the anesthetic. It is a means of preventing that awful thirst which often follows anesthesia, also much of the irritant action of the vapor on the mucous membrane of the stomach.

Some surgeons recommend the hypodermic administration of some morphine just previous to the operation. Why, I know not. It is contra-indicated inasmuch as it interferes with the reflexes, the very thing you want to depend upon for reliable information as to the condition of your patient. If the conjunctival reflexes are gone, and pupillary reflexes still acting· the patient is perfectly safe, but if all reflexes are lost and the pupils widely dilated, profound anesthesia exists, and the patient's breathing must be carefully watched. The use of scopolamin and morphine preliminary to that

of chloroform has certain advantages, but it renders the problem of anesthesia more complicated, requiring extreme care, judgment and discretion. So says the summary to a study of this combination, as reported in the A. M. A. Journal. The use of scopolamin or hyoscine or atropine alone would be better than in combination with morphine, as their tendency is to act on the cerebral centres rather than on the reflexus.

Why one should tell the patient to breathe natural I know not. Natural breathing is an unconscious affair- make it conscious and it at once becomes unnatural. If the patient speaks of the breathing themselves, (as some do) answer them in a way that they will believe that you have no concern as to how they breathe; if at any time you want them to take a long breath tell them so, give them something definite to do, and when done change the subject.

Most patients go to the operating table with a natural dread of the anesthetic- especially are they afraid of getting too much chloroform. This can oftentimes be overcome by putting one or two drops on the mask, then waiting for the patient to indicate that they cannot smell it at all, when it is well to assure them that you are giving it slowly for their comfort, then push the chloroform. In Simpson's day, however, they would put a dram or two on the sponge, and have their patient anesthetized in one minute or less—indeed, it is oftentimes done in two or three minutes in some of the Old Country hospitals today—not so if one uses the drop method.

A very important thing to observe is to drop a drop of the liquid on the mask just at the beginning of each inspiration- when the inspiratory movement is over there is no good reason for leaving the mask on the face, on the contrary, it is good to remove it so that the expired air laden with carbon dioxide (CO_2) will not be caught in it. In this way the chloroform is always mixed with pure air and adds to the safety of the event.

Sometimes patients seem to stop breathing or forget to breathe if they do, knead the ribs under the arm pits- a deep breath nearly always results, at which time it is important to have a fresh drop of chloroform on the mask, but never a mask that you have saturated with chloroform while waiting for the patient to breathe or finish struggling.

The patient's head should be placed at that angle that best relaxes all of the muscles of the neck.

A head that is fatsened to a large round body by a short, thick, fat neck, it may require a pillow to do this; in other cases the pillow may do better service under the shoulders.

Patients sometimes complain of a choking sensation, just a short time before consciousness is lost. If they do, insruct them to blow the vapor away from them, have them blow vigorously; a deep breath always follows this trick, when if a fresh drop of chloroform is placed on the mask, at the

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beginning of this inspiration, the vapor is distributed over the entire lung surface· the spasm is overcome and the choking is gone.

Many of these little things, simple as they may seem, all contribute to comfort, safety and minimum dosage, but there is another force, more potent than any mentioned, of which I wish to speak.

The first action of chloroform on the cerebral centres is stimulation, the second is not well defined. It may be paralysis, perhaps anemia, perhaps coma, but one thing it certainly is· and that thing is sleep. With the beginning of anesthesia comes a time when the patient's thought centers are most active, chloroform incerases that activity. There is no time in the patient's when the subjective or the thinking mind, (that mind that acts and reacts upon itself), is so active, so alert, so impressionable, so open to suggestion.

It is not the purpose of this paper to discuss suggestive therapeutics save only as it is a means toward minimum dosage of chloroform.

In using it to aid this drug in the production of anesthesia the one thing to do is to keep the patient's mind filled (saturated) with the idea that they are going into a quiet sleep, during which they will feel no pain, and from which they will awake refreshed and glad, or any other idea that will crowd out all thoughts of fear· or fright, or distrust, or opposition to the intended anesthesia. Hewitt remarks, "With a little care, it is often possible to make a pleasant impression upon the mind prior to the loss of consciousness, and this pleasant impression result in agreeable dreams rather than frightful nightmares.

How this is best accomplished depends upon the individuality of patient and anesthetist, and requires further research, but in a general way we may venture some hints. If possible engage the patient in conversation, if they will talk of other things let them lead the conversation, the anesthetist using his influence to keep it going, by joining the patient in the subject. If it's joking, joke with them; if they laugh, laugh with them; if they sing· sing with them; if they pray, ah, ah, pray with them, (it may do thee good). The thought is to keep their mind busy at something other than the operation. If they will not talk, then talk to them, lecture them in a monotone voice. It is well sometimes to explain to them the way sleep comes on and when you see that they are really getting sleepy, make a suggestion that they are now almost alseep, and afterwards drive home that suggestion by more direct and pointed ones, remembering that we ourselves have been put to sleep in the lecture room by the monotone of some of our teachers.

The anesthetist requires no super-human intelligence or effort to do this, but tact is everything, without tact and the patient's confidence little can be done with suggestion, but wherever possible, it should be encouraged because of the fact that when suggetsion has been used a minimum amount of chloroform was used, and that patient's have conversed intelligently with the anesthetist while the surgeon was in the midst of a major operation· and

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too, that operations have been done under suggestion alone. All these hints if carried out, tends to safety and minimum dosage of chloroform and largely eliminates all danger of the drug, but, on the other hand, be it ever remembered that this drug is a treacherous one, "It kills alike the robust, the weak, the well and the diseased, even the previous safe passage through one or more inhalations is no guarantee against its lethal action. It kills without warning, so suddenly that no forethought or skill, or cure, can guard against the fatal result."

The drug falls on the mask, drop by drop. The patient lies as if in a deep sleep, but in the twinkling of an eye sometimes, something, somehow, somewhere goes wrong, and life is gone.

DISCUSSION.

Dr. Gordon, Wagoner:

I like the paper very much. I think it well for us all to think well about the matter before beginning an operation. The doctor has mastered the matter and I like him because he looks so closely after the welfare of the patient.

Dr. Virgil Berry, Okmulgee:

No one will deny that the doctor's paper from a chloroform standpoint was a very able one. But I protest against the use of chloroform. I use ether. We can put them to sleep just as well and with so much less danger.

As to the anesthetist, the same thing applies as in chloroform.

I have heard the contention that in the South they did not give ether. I have been told that it could not be used in the South but that is a mistake, for it is used except in very exceptional cases.

My experience with chloroform has not been good. I had a case of ovarian cyst to operate, and the patient died just after anesthesia was established.

Anothr case where chloroform was used was that of a boy with an injury to his foot. We had a long hard time of it getting him out from the effects. I know ether is safe.

Dr. Haskins, Nashville, Tenn.

I think the best anesthetists we have today are the ones who give the least necessary.

In my opinion the best anesthetic we have today, except for the lying-in chamber, are nitrous oxide and oxygen. Patients have been kept under this anesthesia for hours. One at John Hopkins was kept under the influence for six hours and woke up all right on the table. (It was an operation for sarcoma.) If we have no pulmonary or renal trouble I believe it is an excellent anesthetic. If we have very nervous patients, ether must be used.

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Nitrous oxyde and oxygen are used by the Mayos in Rochester.

Dr. Fowler, closing:

I just want to thank you for the kind and enthusiastic reception given my paper. Thank you.

UNIVERSITY OF OKLAHOMA, SCHOOL OF MEDICINE.

Robert F. Williams, Dean· Oklahoma City, Oklahoma.

The reorganization of the School of Medicine of the University of Oklahoma was undertaken for the purpose of immediately elevating its standard to the requirements of Class A institutions, as defined by the Council on Medical Education of the A. M. A. and the Association of American Medical Colleges.

An essential requirement for this standard is that a medical school shall control its own hospital. This condition had not been previously possible of attainment by the University Medical School, and to accomplish this end our energies were first directed. Hearing that the city was not in condition to conduct the City General Hospital, which was nearly completed, we made tentative proposals to the Commissioner looking to the acquisition of the city's hospital. Our proposition was at first corially received, but opposition to the plan subsequently developed which led the Commissioner to name conditions impossible of acceptance by us, so that our proposition was withdrawn and the plan abandoned.

It then appeared that Oklahoma City could not offer the School the necessary hospital facilities, and a visit was made to Muskogee. The city authorities there and the profession showed an admirable public spirit in their readiness to meet any reasonable demands for quartering this department of the State University, which was greatly appreciated. The distance from Norman, the seat of the University, however· was the great difficulty. While this matter was under consideration Dr. J. B. Rolater came forward with a generous offer to enlarge his private hospital to meet our needs, and to lease us his hospital and adjacent residence for a term of ten years at a very reasonable annual rental, and this offer was accepted.

The residence provides us with a beautiful school building which any medical school would be proud to occupy. The handsome exterior attracts immediate attention by its beauty and dignity. The interior is finished throughout in hard wood and has been handsomely equipped in harmony with the building with durable and serviceable furniture.

On the first floor are the general office, the Dean's private office, the library and the clinical laboratory; while the second floor contains lecture rooms for the Junior and Senior classes, a study room and a rest room for students, and the toilets.

The additions to the hospital are being pushed rapidly and we expect to get possession of the building early in December. The addition will increase the capacity of the building from twenty-two beds to sixty-four. When

completed, the hospital will contain twenty-six ward beds. The wards for white men and white women will have nine beds each and those for colored men and colored women will have four beds each. The rest of the beds will be in private rooms, a few of which will contain two beds. Several of the rooms will have private baths, and all of them will be fitted with the most comfortable beds purchaseable with box springs and felt mattresses.

The hospital will contain three operating rooms, thoroughly modern in finish and equipment, and well lighted for use by day or night. Adjacent to these will be two sterilizing and wash rooms, which will greatly expedite the work in this department.

An attractive feature of the hospital will be the large sun parlor located at the southeast corner of the building. This will be comfortably furnished in Mission and Wicker. Above it will be a spacious covered porch, besides the verandas, which extend around the building on both floors.

In the basement will be located the free dispensary for walking patients, a most valuable adjunct to our teaching facilities. This department will be comfortably arranged, with waiting rooms for white and colored patients, and private rooms for examining patients and instructing students.

This institution will be equipped to care for all classes of cases, and will receive all classes except contagious diseases.

The school opened October 2nd and is now in full running order, with a Faculty and student body enthusiastic in this work. The courses have been arranged, with regard to subjects required and the number of hours given in each, exactly according to the requirements of the Association of American Medical Colleges for the standard of Class A institutions.

The quick development of such an institution as we have, without special appropriation by the Legislature, has taxed the financial strength of the University, but the Board of Education, recognizing its need, directed that the plan be carried out and the authorities of the University have concurred generously in the furtherance of the development of the Medical School. All of these, gentlemen, by this recognition of the claims of the Medical Profession to the largest consideration in our highest institution of learning, have won the approbation of the profession throughout the state.

Through the courtesy and interest of the Medical Faculty, a library is being developed by gift and loan of books and subscription to medical journals which will do the school infinite credit and be of untold benefit to both Faculty and students. In several instances whole libraries have been loaned with the prospect of donation later.

To date we have a total of fifty-two students, thirty-two at Norman in the Freshman and Sophomore classes, and twenty in Oklahoma City, in the Junior and Senior classes. All of the classes are far above the average in intelligence and industry.

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The schedule has been arranged so that the students in Oklahoma City have their Saturday afternoons free for the purpose of enabling them to affiliate in the student life of the University in Norman.

The Hospital, which has been officially named by the Board of Education, "The State University Hopital" (formerly Rolater Hospital), will have as Superintendent Miss A. B. Cowles, a lady of large experience in hospital management, and at present Superintendent of the Colonia Hospital in Mexico City.

Already we have been approached by charitable societies looking to the maintenance of beds, and inquiries have been made concerning the endowment of rooms, gratifying evidences of the confidence of the public in the State University Hospital.

A Training School for nurses will be conducted under the direction of the Superintendent, Miss Cowles. Here in a three-year graded course every facility will be offered the young women of the state for a thorough and rounded training in the art of nursing under the tutelage of trained nurses of wide experience and of the Faculty of the school of Medicine.

The hospital on opening will be organized with a full corps of nurses, orderlies, etc. A graduate physician will be appointed interne and he will live in the hospital. The position of interne, carrying as it does an unequalled opportunity for the development of clinical skill and professional poise, will be filled each year from the graduates, selection for the position being the highest possible compliment to the successful applicant.

XUM

EDITORIAL.

NOSTRUMS AT HOME.

The American Medical Association through its campaign of publicity and the Federal Government, through legal prosecutions, are making matters uncomfortable for the exploiters of nostrums, the "patent medicine" as well as the "ethical specialty." But those who favor honesty and decency in matters pertaining to medicines must give their active support, if much is to be accomplished. The state medical societies, the county societies and individual physicians should lend their active support in the fight against dishonest and viscious nostrums.

The federal authorities entrusted with the enforcement of the Food and Drugs Act are in particualr need of support. The Food and Drug Act is a federal law and hence applies only to the territories and to interstate traffic and thus is powerless as concerns the worst kind of fraud when the medicine is sold only in the state in which it is made. As a result, firms that get in the toils of the federal law are able to get along comfortably by devoting their energies to the exploitation of their dishonest stuff in their own state. That is, when it is not safe to send their concoctions out of the state the efforts to sell them at home is doubled and trebled. For this reason each state should pay particular attention to the "home industry" in frauds. On another page we give some recent convictions under the Food and Drugs Act. The nostrums exposed by these convictions should be suppressed by the authorities of the states in which they are manufactured. We suggest that physicians bring the matter to the attention of those persons in their state whose duty it is to protect the health of the people and to point out to these authorities how they may perform a valuable service to their constituents.

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THE REVISED OWEN BILL AND ITS OPPENENTS.

Two years ago Senator Owen introduced his well known bill for the purpose of consolidating all existing National Health Agencies excepting, for obvious reasons those in connection with the Army and Navy. This bill was of the Senator's own volition and creation, having for its object a more efficient protection of the welfare of the people generally.

Perhaps no greater surprise could have been receivd than was produced by the immediate and concentrated opposition to its enactment. Some of this opposition came from Osteopathic, Homeopathic, Eclectic and Christian Science organizations and throughout all was a strong undercurrent of hostility from manufacturers, or their agents, of questionable products.

The opposition to this measure may be divided into two classes; those who honestly oppose it from a mistaken idea that its passage would imperil their right to employ such a school of medicine as they thought best; those who oppose it from religious motives and those who oppose it simply because its passage would prevent them possibly from exploitation of impure drugs, foods and disreputable practices generally.

To those who conscientiously oppose, no blame should be attached except that of bias, ignorance of the proposed law or general misinterpretation of its terms and purposes.

To meet and answer such objectors the new proposal specifically states that no school or system of medicine shall be favored in its enforcement and declares that no existing States Rights shall be impaired.

This change, which was unnecessary, for our Supreme Court would not allow in any event, a law prejudicial to one class and favoring another to stand nor could the rights of states be infringed; seems not to have changed the attitude of the opposition and there is still a general effort to prevent its passage in any form

Just how a law solidifying those scattered Bureaus and making them more effective should meet with opposition from honest and intelligent people is unexplainable except on the grounds above mentioned. Of course no one expects anything but opposition from a certain class of manufacturers and exploiters of discreditable products; their danger lies in their ability to place on the market cheap and impure products and any regulation with which they might possibly come in contact would subject them to something they cannot stand—the broad glare of daylight and truth.

A branch of the Department of Agriculture· the Bureau of Animal Industry will at present advise a farmer in California, Iowa or Maine how best

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to combat disease in his hogs and cattle, even sending an expert to assist him, another Bureau of the same Department advises him on the destruction of San Jose scale, the enriching of his run-down lands, etc. It is just possible that to some of these objectors it has occurred that a Department of Health would among other functions assume it a duty to advise a community on the prevention and control of diphtheria, scarlet fever and tuberculosis. It is just possible that the department would advise some poor wretch who was spending his last dollar for a "consumption cure" consisting of morphine chloroform and squills that his hope lay not in medicines, but good food and proper environment. It might advise the user of Doan's Kidney Pills to have his urine examined by a chemist to see if he really has a kidney lesion or simple lumbago. It might even enlighten some layman to the fact that the bitters that cured his stomachache would signally fail to benefit his neighbor who had apparently similar symptoms but who in reality had something else.

The opponents of this measure should understand that the President of the United States, the Republican and Democratic platforms endorsed the spirit and essentials of this proposed law and that in the same Congress having this bill under consideration several bills having the aim of the Owen bill in view were presented and that the Owen bill was the one given more thought than all the others combined.

They should not be veritable dogs in the manger; if they do not want to eat hay they should not object to our eating it and those schools of medicine opposing this measure should not be hitched up in the company of disreputables in their opposition.

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STATE BOARD OF MEDICAL EXAMINERS' NOVEMBER REPORT

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NEW BOOKS

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL

(Mayo Clinic) 1910

Collected Papers by the Staff of St. Mary's Hospital (Mayo Clinic) for 1910. Octavo of 633 pages, illustrated. Philadelphia and London. W. B. Sanders Company, 1911. Cloth, $5.50 net.

This very interesting volume is really a history of the various operative procedures of the Mayo's and their Staff at Rochester with the papers read before different medical societies of the country during the year 1910.

It should prove of great interest to the surgeon, especially, and is of undoubted value to the general practitioner as it covers the points of diagnosis thoroughly in those subjects considered.

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The book is well worth while and should find a large number of readers in the profession.

A MANUAL OF THE PRACTICE OF MEDICINE

The New (9th) Edition Revised.

A manual of Practice of Medicine, by A. A. Stevens, A. M., M. D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania. Ninth Edition, Revised. 12mo of 573 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1911. Flexible Leather, $2.50 net.

This little volume is prepared with a view of giving the busy man and student a reliable and ready work of reference on the practice of medicine. Of course its size prevents a great enlargement of the subjects, but the salient features and important points and phases of disease is clearly given.

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The publishers point out the following striking features in this new edition as being worthy of notice by the medical profession.

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A Text-Book of the Practice of Medicine, by James M. Anders, M. D., Ph. D., LL. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine· Medico-Chirurgical College, Philadelphia. Tenth Revised Edition. Octavo of 1328 pages, fully illustrated. Philadelphia and London. W. B. Sanders Company, 1911. Cloth, $5.50 net; Half Morocco, $7.00 net.

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